

CERTIFICATION OF FACSIMILE TRANSMISSION

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By: *Thomas M. Dougherty*Date: DEC 9, 2002IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Wilhelm Frank et al.
Applic. No. : 09/639,962
Filed : August 16, 2000
Title : Piezoelectric Assembly
Examiner : Thomas M. Dougherty
Group Art Unit : 2834

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DEC 09 2002

R E S P O N S E under 37 C.F.R. § 1.116

S i r :

Responsive to the final Office action dated August 8, 2002,
the following remarks are made.

Reconsideration and allowance of claims 1-9 are solicited.

Claims 1-9 remain in the application.

In the second paragraph on page 2 of the above-identified
Office action, claims 1 and 6-9 have been rejected as being
obvious over Miyoshi (US 5,239,223) in view of Crawley et al.

(US 4,471,256) [Applicants note that US 4,471,256 is the patent number of *Igashire et al.* and not of *Crawley et al.* which has the patent number US 4,958,100. However the Examiner's discussion makes it clear that the Examiner refers to *Crawley et al.* and not *Igashire et al.*] under 35 U.S.C. § 103.

In the second paragraph on page 3 of the Office action, claims 1, 2, and 5 have been rejected as being obvious over *Onishi* (JP 55-134990) in view of *Crawley et al.* under 35 U.S.C. § 103.

In the second paragraph on page 4 of the Office action, claim 3 has been rejected as being obvious over *Miyoshi* and *Crawley et al.*, or *Onishi* and *Crawley et al.* in view of *Kaji* (US 4,354,131) under 35 U.S.C. § 103.

In the second paragraph on page 5 of the Office action, claim 4 has been rejected as being obvious over *Miyoshi* and *Crawley et al.* in view of *Takahashi* (US 4,943,004) and *Onishi* under 35 U.S.C. § 103.

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

In the response mailed July 2, 2002, Applicants stated that:

In col. 4, lines 25-26, Miyoshi calls for "the metal case 5, having an internal diameter **longer** than an outer diameter of the electrostrictive effect element 1" (emphasis added). Also the drawings in Miyoshi clearly show that the "electrostrictive effect element 1" is **not** contacted by the "metal case 5".

Clearly, Miyoshi does not show a prestressed piezoelectric actuator being **contacted** by said **hollow body**, said top cover plate, and said bottom cover plate, as recited in claim 1 of the instant application. Therefore, the invention as recited in claim 1 of the instant application is believed not to be anticipated by Miyoshi.

The English Abstract of Onishi states that the purpose of Onishi is to "facilitate **fabrication** of a piezoelectric element unit." Unfortunately, the English Abstract of Onishi is somewhat confusing and therefore the disclosure is not clear. As far as Applicants were able to ascertain, the fabrication process disclosed in Onishi has the purpose of pressure-attaching the "protrudent coils 6c" to the "outside surface of piezoelectric elements". After fabrication the "take-out cylinder 6d is used to remove the piezoelectric element from the "insulating case 6". Consequently, any prestressing of the piezoelectric element in Onishi is not permanent but only applied during fabrication.

Clearly, Onishi does not show a piezoelectric assembly with a piezoelectric actuator with a **permanent and fixed** prestress, as recited in claim 1 of the instant application. Therefore, the invention as recited in claim 1 of the instant application is believed not to be anticipated by Onishi.

The Examiner subsequently modified the rejections over Miyoshi and Onishi by applying the secondary reference Crawley et al.. On pages 2-3 of the Office action, the Examiner stated that Crawley et al. show an elastic hollow body which "has an

extension direction and is inserted into said hollow body in said extension direction between said cover plates for **prestressing** said actuator." (emphasis added).

Applicants found no indication that the elastic hollow body of *Crawley et al.* is (purposefully) prestressed.

A word search of *Crawley et al.* found only three locations where the word "stress" or a related root word/phrase was used. Namely in claim 14 ("said control means applies a voltage generated by **stress** in said member to damp a resonance of a truss structure including the member") and claim 15 ("said composite material includes Plies oriented for converting radial **stress** of said member to axial **stress**"). As can be seen from the relevant passages, the word "stress" was not used in the context of prestressing.

MPEP § 2112 (8th edition) states that:

EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary

skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted)

As discussed in MPEP § 2112, an element of a claim that is not expressly or implicitly disclosed in a prior art reference is inherently disclosed therein if, and only if, the "missing" element is necessarily present in the prior art. The principles of inherency require that the inherency be absolute, and not probabilistic. As far as Applicants were able to ascertain, there is no disclosure or suggestion in the applied references that it is **absolutely necessary** that the piezoelectric actuators disclosed in the applied references have a *permanent and fixed* prestress.

Furthermore, according to the sub-heading in MPEP § 2112, the "EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY"; the Examiner has the burden of proof (by a preponderance of the evidence) to show that the applied references necessarily disclose or suggest purposefully prestressing a piezoelectric actuator. The Examiner cannot simply be the devil's advocate postulating certain results or processes that may or may not occur or be present in the applied prior art and leave it up to Applicants to show or prove the contrary.

It is accordingly believed to be clear that neither Miyoshi nor Onishi in view of Crawley et al. suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since claims 2-9 are ultimately dependent on claim 1, they are believed to be patentable as well.

Considering the deficiencies of the primary references, it is believed not to be necessary at this stage to address the secondary references Kaji and Takahashi applied in the rejection of the dependent claims, and whether or not there is sufficient suggestion or motivation with a reasonable expectation of success for modifying or combining the references as required by MPEP § 2143.

In view of the foregoing, reconsideration and allowance of claims 1-9 are solicited.

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In the event the Examiner should still find any of the claims to be unpatentable, the Examiner is respectfully requested to telephone counsel so that, if possible, patentable language can be worked out.

Petition for extension is herewith made. The extension fee for response within a period of one month pursuant to Section 1.136(a) in the amount of \$ 110.00 in accordance with Section 1.17 is enclosed herewith.

Please charge any other fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,


For Applicants

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December 19 2002

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